

REMARKS

Claims 1, 3-15 and 17-21 are pending in the present application. By this amendment, Applicants have amended claim 1, cancelled claim 2 and added new claims 18-21. Applicants respectfully submit that the present application is in condition for allowance based on the discussion which follows.

Claims 1, 4, 6, and 7 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No.: 2003/0113234 (hereinafter “Murray”). Further, claims 2 and 3 were rejected under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Murray and claim 5 was rejected under 35 U.S.C. §103 as being unpatentable over Murray.

With regard to Murray, the Examiner alleges that Murray teaches a method for making a substrate selective membrane by polymerizing a mixture comprising a template (iron vinyl benzoate complex), a functional monomer (e.g., styrene), a cross-linker (e.g., divinyl benzene), a pore former (e.g., polyester), a plasticizer (nitrophenyl octyl ether) and an initiator (Examiner cited Murray, [0016]).

With regard to claims 2 and 3, the Examiner alleges that although the claims differ from the teaching of Murray, in that Murray does not appear to teach a porosity and the claimed pore sizes, the Examiner alleges that the membranes in Murray are made the same way as in the present claims and therefore the Examiner alleges that the pore size and porosity would be inherently the same.

Contrary to the prior art rejections, the present invention is not anticipated or obvious in view of Murray. In order to further clarify distinctions between the present

invention and the disclosure of Murray, by this Amendment, Applicants have amended claim 1 to recite that the mixture comprises a template selected from the group consisting of biological receptors, nucleic acids, immunosuppressants, hormones, heparin, antibiotics, vitamins, carbohydrates, lipids, saccharides, nucleoproteins, mucoproteins, lipoproteins, peptides and proteins, glycoproteins, glucosaminoglycans and steroids. In addition, Applicants have added new claim 18 which further recites that the template is selected from the group consisting of drugs and synthetic molecules possessing biological activity. Further, by this Amendment, Applicants have amended claim 1 to include the subject matter previously recited in claim 2, namely that the membrane contains both small diameter pores (i.e., less than 100 nm) and large diameter pores (i.e., greater than 500 nm). Subject matter basis for the amendment to claim 1 and new claim 18 can be found in original claim 2 and the specification as filed, page 6, lines 20-23, and page 9, lines 4-11.

Applicants respectfully submit that as amended, the present invention is further distinguishable in that the present method comprises a mixture having a template which is not taught or in any way made obvious from the disclosure of Murray. In particular, the claimed template is completely different than the polymers of Murray which bind simple ions such as phosphate anions, nitrate anions and ferric cations. In Murray, in order to bind such ions, Murray discloses polymers which are produced which have ligands suitably oriented for complexing with the aforementioned small target ions, (i.e., very small species, single atoms or small groups of atoms such as phosphate). In sharp

contrast to Murray, in the present invention, large molecules are the target not ions, and thus, the present template is completely different from the polymers of Murray.

A further distinction of the present invention over Murray is that as amended, claim 1 now recites the presence of pores having a wide range of sizes including large pores of greater than 500 nm in diameter as well as small spores of less than 100 nm in diameter. The claimed large pores reflect the larger size of the (i.e. the target) molecules of the claimed substrate-membrane.

Although the Examiner alleges that “since the membrane in the reference is made the same way as in the claims, the pore size and porosity would be inherently the same,” the Applicants respectfully submit that the Examiner is incorrect that Murray makes its membranes “the same way as in the claims”. To the contrary, Murray specifically uses polymer permeable agents whose effect is “to increase swelling in the membrane in aqueous solutions.” (See e.g., Murray [0036]). In sharp contrast to Murray, the present porogenes and their likely mode of action is disclose in the present specification in the pages bridging pages 5 and 6 between the cross-linked co-polymer and polyethylene glycol in which the Applicants hypothesis on the two likely mechanics of porogen induced pore formation. One is that a porogen such as a linear polymer, e.g. PEG, facilitates phase separation between the growing co-polymer chains and a solvent, containing dissolved linear PEG, by increasing the level of their thermodynamical incompatibility, wherein pores are formed between the coalescent cross-linked polymer globules. A second possible mechanism involves formation of different microlegions in the polymer structures. Due to high molecular weight of a polymer such as PEG, the

phase separation is not complete, resulting in heterogenous microphase non-equilibrium structures being formed which remains stable and form a semi-interpenetrating polymer network. Accordingly, Murray does not disclose the claimed method and in no way teaches or makes obvious the claimed porosity and pore size as claimed.

Based on the foregoing, Applicants respectfully submit that claim 1 is not anticipated by or obvious in view of Murray and that defendant claims 3-7 and 18 are not anticipated by or obvious in view of Murray for at least the same reasons as claim 1, from which they depend, as well as for reciting additional elements not disclosed or obvious from Murray.

Finally, by this Amendment, Applicants have added new claims 19-21 directed to subject matter previously disclosed but not claimed. With regard to claim 19 and 20, these claims are directed to an amount of plasticizer in the mixture being from 5-50% (claim 19) and from 5-20% (claim 20). Support for added claims 19-20 can be found in the specification at page 10, lines 8-10. Furthermore, Applicants respectfully submit that claims 19 and 20 are further distinguishable from Murray which discloses a significantly higher amount of plasticizer. Specifically referring to Murray examples 2, 3 and 4, an ingredient is “400 ml of nitrophenyl octyl as a plasticizer”. Murray provides not explanation as to why it uses a plasticizer. Furthermore, the plasticizer does not seem to be a primary function of its substance. However, plasticizer, is the main component, by weight or by volume and serves as the solvent in Murray. Thus, the plasticizer component is very different from the use of a relatively small amount of plasticizer compounds as recited in claims 19 and 20. Accordingly, Applicants respectfully submit

that Murray fails to teach or in any way make obvious the plasticizer amounts of claims 19 and 20.

With regard to claim 21, Applicants respectfully submit that Murray fails to teach or in any way make obvious a method in which a plasticizer is co-polymerized with the monomers and cross-linker to form a covalently bonded network. Subject matter basis for added claim 21 may be found in the specification as filed page 8, lines 4-6 and therefore, claim 21 does not constitute new matter.

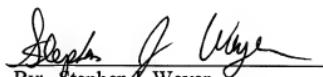
Based on the foregoing, Applicants respectfully submit that added claims 19-21 are further not anticipated by or obvious in view of Murray for at least the same reasons as claim 1 and further for reciting additional features not taught or made obvious from Murray.

Finally, in view of the foregoing, Applicants respectfully request rejoining of withdrawn claims 8-14. These claims depend from what now should be found to be allowable claim 1 and therefore each of the aforementioned withdrawn claims include the allowable subject matter of claim 1. Accordingly, Applicants respectfully submit that the aforementioned withdrawn claims present allowable subject matter for at least the same reasons as claim 1.

In view of the foregoing, Applicants respectfully submit that the present application is in condition for allowance.

Respectfully submitted,

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